

**GEORGIA LNP FRAMEWORK  
WIRELINE ATTRIBUTES**

**ATTRIBUTE:**

**16. ADMINISTRATION**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AT&T	18	18	18	21	18	
BELLSOUTH	19	17	19	21	7	
MC METRO	17	19	17	21	17	
MEDIA ONE	10	10	8	10	12	
MFS	7	6	8	8	8	
SPRINT						
STANDARD	21	16	11	19	11	
ATTRIBUTE TOTAL	92	86	81	100	73	0
MAXIMUM	147	147	147	147	147	147

**GEORGIA LNP FRAMEWORK  
WIRELINE ATTRIBUTES**

**ATTRIBUTE: 17. PATENTS / LICENSING / COPYRIGHTS IMPACT**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AT&T	0	9	9	9	9	
BELLSOUTH	0	9	9	9	9	
VO METRO	0	9	9	9	9	
MEDIA ONE	0	9	9	9	9	
MFS	0	9	9	9	9	
SPRINT						
STANDARD	0	9	9	9	9	
ATTRIBUTE TOTAL	0	54	54	54	54	0
MAXIMUM	63	63	63	63	63	63

**GEORGIA LNP FRAMEWORK  
WIRELINE ATTRIBUTES**

ATTRIBUTE:            24. IMPLEMENTATION TIME FRAME (WIRELINE)

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AT&T						
BELLSOUTH						
VOI METRO						
MEDIA ONE						
MFS						
SPRINT						
STANDARD						
ATTRIBUTE TOTAL	0	0	0	0	0	0
MAXIMUM	42	42	42	42	42	42

**GEORGIA LNP FRAMEWORK  
WIRELINE ATTRIBUTES**

ATTRIBUTE:                      **25. SMS INTERACTIONS (WIRELINE)**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AT&T						
BELLSOUTH	6	6	6	6	6	
NO. METRO	6	6	6	6	6	
MEDIA ONE						
MFS						
SPRINT						
STANDARD						
ATTRIBUTE TOTAL	12	12	12	12	12	0
MAXIMUM	42	42	42	42	42	42

**GEORGIA LNP FRAMEWORK  
WIRELESS ATTRIBUTES**

**ATTRIBUTE: 18. IMPACT ON NA NUMBERING PLAN - CELLULAR (WIRELESS)**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AIRTOUCH	12	20	12	24		
AT&T WIRELESS	13	20	18	22		
BELLSOUTH MOBILITY	14	18	20	22		
GTE MOBILNET	22	18	20	22		
ATTRIBUTE TOTAL	61	76	70	90	0	0
MAXIMUM	108	108	108	108	108	108

**GEORGIA LNP FRAMEWORK  
WIRELESS ATTRIBUTES**

**ATTRIBUTE:**

**19. HLR / SCP / MSC (WIRELESS)**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AIRTOUCH	95	90	95	95		
AT&T WIRELESS	95	90	95	95		
BELLSOUTH MOBILITY	123	67	75	130		
GTE MOBILNET	129	67	80	108		
ATTRIBUTE TOTAL	442	314	345	428	0	0
MAXIMUM	624	624	624	624	624	624

**GEORGIA LNP FRAMEWORK  
WIRELESS ATTRIBUTES**

**ATTRIBUTE: 20. CELLULAR NATIONWIDE ROAMING / TECHNICAL (WIRELESS)**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AIRTOUCH	38	38	38	38		
AT&T WIRELESS	38	38	38	38		
BELLSOUTH MOBILITY	23	20	23	26		
GTE MOBILENET	45	37	37	39		
ATTRIBUTE TOTAL	144	133	136	141	0	0
MAXIMUM	228	228	228	228	228	228

**GEORGIA LNP FRAMEWORK  
WIRELESS ATTRIBUTES**

ATTRIBUTE:

**21. FRAUD IMPACTS (WIRELESS)**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AIR TOUCH	24	24	24	24		
AT&T WIRELESS	24	24	24	24		
BELLSOUTH MOBILITY	8	8	8	8		
GTE MOBLINET	16	10	10	10		
ATTRIBUTE TOTAL	72	66	66	66	0	0
MAXIMUM	96	96	96	96	96	96



**GEORGIA LNP FRAMEWORK  
WIRELESS ATTRIBUTES**

**ATTRIBUTE: 22. RATING AND BILLING (WIRELESS)**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AIR TOUCH	10	19	13	19		
T&T WIRELESS	13	15	13	19		
BELLSOUTH MOBILITY	13	10	13	13		
GTE MOBILNET	15	10	15	15		
ATTRIBUTE TOTAL	51	54	54	66	0	0
MAXIMUM	96	96	96	96	96	96

**GEORGIA LNP FRAMEWORK  
WIRELESS ATTRIBUTES**

**ATTRIBUTE: 24. IMPLEMENTATION TIME FRAME (WIRELESS)**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AIRTOUCH						
AT&T WIRELESS						
BELLSOUTH MOBILITY						
GTE MOBLINET						
ATTRIBUTE TOTAL	0	0	0	0	0	0
MAXIMUM	24	24	24	24	24	24

**GEORGIA LNP FRAMEWORK  
WIRELESS ATTRIBUTES**

**ATTRIBUTE:**

**25. SMS INTERACTIONS (WIRELESS)**

PLAN	GTE	CPC	LANP	LRN	RTP	ITN
AIRTOUCH						
AT&T WIRELESS						
BELLSOUTH MOBILITY						
GTE MOBILNET						
ATTRIBUTE TOTAL	0	0	0	0	0	0
MAXIMUM	24	24	24	24	24	24

## **Attachment #5:      Implementation Issues**

## **Selection Committee**

### **Implementation Issues**

**Identified at the December 5, 1995 Meeting**

#### *GTE Proposal:*

- GTE stated that information received from various switch vendors indicated that the full switch functionality needed to support their proposal could be made available within 12 months from the implementation decision
- AT&T Network Systems indicated that they have made no commitment to a 12 month interval at this point
- Prior to finalizing an availability date, it would be necessary to develop a switch requirements document and then to negotiate an availability date from the switch manufacturers
- Out of state calls would be handled through an N-1 dip to a database
- A question was raised concerning the acceptability of GTE's overlay NPA, in light of the recent Commission decision to implement the Atlanta NPA split geographically

#### *CPC Proposal:*

- The New York trial which uses a CPC, is planned for 1Q96 - 2Q96; results of this trial may impact availability dates
- Implementation in the DMS-100 and DMS-100/200 switches is planned for 4Q96 with an IN trigger
- Implementation in the 5ESS is planned for 1Q97 with the LNP trigger
- Implementation in the 1AESS is planned for 2Q97 with the LNP trigger
- The ability to swap the CPC and the NPA is planned for 2Q96 for the 5ESS switch
- There are no current plans to implement the CPC/NPA swap in the 1AESS
- The CPC solution easily migrates to an LRN solution
- Prior to finalizing an availability date, it would be necessary to develop the Georgia requirements and then to negotiate/confirm availability dates from the switch manufacturers

#### *LRN Proposal:*

- Implementation on the 5ESS, with full functionality is planned for 1Q97, with an AIN trigger
- Implementation on the 1AESS is planned for 2Q97, with an AIN trigger
- Implementation on the DMS-100 and DMS-100/200 is planned for 2Q97, using an AIN TAT trigger
- Implementation on the Ericsson switch is planned for 2Q97, with an AIN trigger
- Implementation on the Siemens switch is planned for 2Q97, using an IN trigger

- Implementation on the 4ESS is planned for 2Q97, with an AIN trigger
- These switch implementation planning dates are based on vendor commitments made in Illinois and are based on the Illinois switch requirements document
- Prior to finalizing availability dates for Georgia, it would be necessary to review the Illinois switch requirements document and determine its applicability to Georgia, and then to negotiate availability dates from the switch manufacturers based on any (or no) requirements document modifications

*LANP Proposal:*

- No switch availability planning dates were known
- The LANP development effort is a significant effort and is somewhat greater than the effort required for LRN
- There is a LANP trial in New York
- Prior to finalizing an availability date, it would be necessary to develop a switch requirements document and then to negotiate an availability date from the switch manufacturers

*RTP Proposal:*

- No switch availability planning dates were known
- Although there is an option of implementing RTP without a database, there was concern that this implementation option would not work
- There is a requirement for SS-7 between the Release switch and the Pivot switch
- There are more standards implications with this proposal
- Prior to finalizing an availability date, it would be necessary to develop a switch requirements document and then to negotiate an availability date from the switch manufacturers

*General Items:*

- The availability dates on wireless switches were not known
- For those cases where there are planned switch dates, there is some concern by some Selection Committee members on the ability to incorporate the functionality in the switches by the committed dates

**Attachment #6: Companies Input on  
Implementation Plan  
Options**



AT&T Wireless Services  
350 S. Australian Avenue  
West Palm Beach, FL 33407  
P.O. Box 34703  
West Palm Beach, FL 33416-4703

## MEMORANDUM

To : Neil Knight  
From : John Giannella  
Re : Number Portability  
Date : 12/20/95

In response to the letter dated December 21, 1995 requesting comments on the pros and cons of each implementation plan (LRN and CPC to LRN), AT&T Wireless Services (AT&TWS) is focusing their efforts on a long term solution of number portability. When AT&TWS decides to enter number portability, the long term preferred solution is LRN. We are not considering migrating from one solution to another when we decide to port numbers.

There is no need for AT&TWS to be concerned with implementation (page 17 - 5.1) dates for wire line solution because our focus is on the long term solution. We have no reason to believe that the dates mentioned by each vendor are not obtainable.

If anyone has any questions please do not hesitate to call me at 407-655-7444.





## POSITION OF BELLSOUTH TELECOMMUNICATIONS (BST)

### CPC TO LRN MIGRATION PLAN

As a fundamental statement of belief, BST does not believe that industry efforts to develop a long term number portability solution should be diverted to consideration of any mid-term or interim database solutions. BST cannot support the implementation of such solutions unless it can be clearly demonstrated that migration to the permanent long term solution will not be delayed and that deployment of these solutions can withstand rigorous cost/benefit scrutiny. As discussed below, this demonstration has specifically not occurred in discussions within Georgia on a potential CPC to LRN migration plan.

BST's general opposition to the deployment of interim database number portability solutions is based upon a number of factors. Since the same industry resources will be required to develop an interim database solution or a long term solution, the deployment of interim database solutions will only delay the availability of a fully functional long term database solution. Interim database solutions are expected to be incomplete solutions involving manual operations workarounds and manual processing of billing. These manual operations are inherently more prone to errors than automated or "flow through" procedures. An interim database solution migrating to a robust long term solution will result in a more complex implementation plan. This added complexity will introduce opportunities for errors and potential delays and therefore more disruption in the public switched telephone network. Finally, although costs have not been quantified, it should be obvious from the preceding factors that deploying interim database solutions will drive up the total cost of number portability, a cost which BST believes should be minimized to the greatest extent possible. Furthermore, the availability of already existent interim solutions (i.e RCF) is adequate to provide number portability capabilities until a robust, long term solution can be deployed.

Discussions by the Georgia Number Portability Selection Committee on the specific potential CPC to LRN migration deployment plan have revealed no tangible benefits for moving forward with such a strategy. The recognized objectives of such a plan are twofold: first, to attain quicker deployment of a number portability solution and secondly to deploy a solution which overcomes the deficiencies of currently available interim arrangements. Discussions by the Selection Committee and as documented in this Report have indicated that a CPC to LRN migration plan at best only partially meets these objectives. In regard to time frame, based upon the consensus implementation plan developed by the Selection Committee the CPC proposal is available, at best, only three months prior to the availability of the LRN proposal. This minimal advancement is not even applicable to all switch types currently deployed within Georgia. In fact, in the Atlanta metropolitan area this advancement would only apply to the Nortel DMS 100 which serves the fewest number of NXX codes of the switch types deployed in the area. This time frame may even be questionable since a CPC requirements document has not yet been made available for BST review. Selection Committee discussions and documentation have also revealed that the CPC proposal available in the preceding time frame is not a complete solution and may involve both feature interaction problems and incomplete billing and operations solutions. At least two currently available features, Automatic Recall and Automatic Callback, may not operate properly with the CPC proposal depending on the switch types involved. Therefore, in summary it has been recognized and documented by the Selection Committee that the CPC proposal may only partially overcome the current deficiencies associated with interim arrangements and will only provide a questionable benefit of a partial three month advancement in the availability of an LRN solution implemented directly. In BST's view, this benefit is not outweighed by the associated additional cost and complexities associated with this approach.

The primary rationale offered by MCI Metro in support of the CPC to LRN migration plan is an expressed lack of confidence in the vendors' ability to deliver the LRN solution on schedule. The resulting concern is that the deployment of a long term number portability solution may be delayed. BST does not believe MCI Metro's concerns are well-

founded. First, the vendors present in the Selection Committee discussions have provided their strong assurance that the LRN solution will indeed be delivered as scheduled, a fact documented in this Report. Secondly, BST believes that this concern over vendor availability may apply equally as well to the availability of a CPC solution. In any event, the Implementation Committee proposed by the Selection Committee will have the opportunity to assess the LRN schedule on an ongoing basis. These factors argue strongly that MCI Metro's concerns are not sufficient to support any diversion of industry efforts to implement directly the LRN solution recommended by the Selection Committee.

Finally, BST notes that the preceding discussion focuses primarily on call processing and switch software availability. It must also be noted that as documented by the Selection Committee a Service Management System (SMS) operated by a neutral third party is a key element in implementing any database number portability solution. The Georgia SMS subcommittee has developed an implementation timeline which, although still under review, is believed by the subcommittee to represent an aggressive schedule. This timeline calls for availability of the SMS in the June 1997 time frame. If this schedule proves to be accurate, the SMS may become the controlling factor in the availability of the complete portability solution and even the minimal advancement in switch software availability referenced above will provide no benefit in terms of when the complete solution will actually be available.

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MCI POSITION ON IMPLEMENTATION PLANS  
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MCI strongly believes the availability dates provided by switch vendors for the Location Routing Number (LRN) capability are unlikely to be met. Reliance on these announced dates places at risk the potential for Georgia telecommunications subscribers to enjoy the benefits of competition in 1997. An alternative, albeit interim, databased number portability arrangement is available in the same time frame which does not engender equivalent risk. This arrangement, Carrier Portability Code (CPC), is available 1997 and requires little, any, switch software development. It appears prudent to implement number portability in Georgia using the CPC capability and later migrate to the LRN capability when it becomes available.

The LRN proposal represents substantial risk of delay because:

1. Requirements work has only now been completed in Illinois and BellSouth and some other Georgia participants have yet to endorse the initial version of this document.
2. The time frame for switch software development is extremely tight; the LRN capability is NOT a minor network change. Decades of experience with schedules for switch developments of this magnitude indicate that at least some vendors will not meet initially expected schedules.
3. Implementation delays may be caused by Operational Support System development requirements. Starting number portability using CPC avoids some potential software development scheduling roadblocks.
4. CPC is relatively inexpensive and so provides an opportunity to introduce number portability in Georgia with an investment substantially below that required to introduce LRN. This is because the CPC switch generic is less complex than the that of the LRN. Furthermore, less common channel signaling network investment is required since the signaling loads are lower with CPC than with LRN due to the shorter ISUP (call set-up) signaling messages.
5. A majority of the investment incurred to implement CPC is re-used when a transition to LRN is performed. In addition, the major manufacturers of switches used in Georgia have agreed the transition from CPC to LRN is easily accomplished and with modest administrative effort.

Consequently, we urge the Georgia Commission to adopt an implementation plan which introduce number portability using the CPC capability and which later migrates to the LRN arrangement when it eventually becomes available.

## **MEDIAONE**

### **Discussion on the Proposed**

### **Georgia Number Portability Implementation Plans**

As stated in the Selection Committee Report, Section 5, each Selection Committee member has the opportunity to provide comments on the two proposed number portability implementation plans for Georgia. The two implementation plans being considered are the AT&T Location Routing Number (LRN) proposal and the MCI Carrier Portability Code (CPC) proposal which would migrate to the LRN solution once it becomes available. Both implementation plans support the implementation of LRN as the recommended mid-to-long term solution.

MediaOne strongly recommends that the migration to a database number portability solution in Georgia be directly to the AT&T LRN solution, with no interim CPC step. The reasons for this recommendation are as follows:

- One of the key issues centers on the availability date for the LRN switch software. During the December 19, 1995 Selection Committee meeting, representatives from AT&T, Nortel and Siemens stated that their companies were committed to developing the required switch software upgrades by the second quarter of 1997. They indicated that they have secured the necessary internal funding and have initiated the development effort. In addition, Ericsson has made similar commitments to MFS. Based on the current level of switch vendor commitment, MediaOne believes that the current switch upgrade dates are possible to achieve, and therefore recommends going directly to the LRN solution.
- The deployment of an interim CPC solution will negatively impact the availability of the recommended LRN solution in Georgia. The current CPC-to-LRN implementation plan schedule shows that LRN would not be deployed until 1998. This is too long to wait for a fully operation database number portability solution. Valuable resources will be diverted to the interim CPC solution, which will cause a delay in the availability of a fully functional database solution (LRN). MediaOne does not support spending time and resources on an interim CPC that delays the implementation of the recommended LRN number portability solution for Georgia.
- The current interim CPC schedule indicates that CPC can be made available a couple of months before the LRN solution. With the implementation of a database number portability solution, a significant amount of work is required. This includes the deployment of new network elements, the upgrading of existing switches, the implementation of new internal company procedures, the negotiation of intercompany procedures, and the planning and implementation of a neutral third party SMS system. Because of the amount of work required, it is MediaOne's opinion that the earlier CPC schedule will not be met, and that CPC would actually be deployed closer to the currently identified LRN schedule.

MediaOne feels that it would be a mistake to divert scarce resources away from the implementation of LRN as the recommended database number portability solution for Georgia. It is important to "keep our eye on the mark" and to move as quickly as possible to a fully operational database number portability solution.

Recognizing the complexity of the effort to implement a database number portability solution, it is important to evaluate the implementation progress and direction during the implementation process. As additional information is received concerning schedules, commitments, costs, interface issues, SMS work, etc. it will be important to evaluate the implementation direction and time frames. This will help to ensure that we are staying on the right path as different circumstances arise.

**Attachment #7:      Implementation Plan  
Summary Schedules**

# **PROPOSED LRN SCHEDULE**

**January 5, 1996**

<b>MAJOR AREA OF FOCUS</b>	<b>1 Q 96</b>	<b>4 Q 96</b>	<b>1 Q 97</b>	<b>2 Q 97</b>	<b>3 Q 97</b>
<b>Switches:</b>	Commission order	Test Plan Developed	(Jan) AT&T Lab-Lab testing for 5E, 1A, 4E, Ericsson	(Apr) Lab-Lab testing for the DMS, Siemens	(Jul) <b>Deploy LRN on DMS, Ericsson, 4E, 1A, Siemens</b>
	Switching and billing requirements finalized	5E-11 Generic G.A. date	(Mar) 5ESS LRN G.A.	(Apr - May) BST Lab testing on 5ESS	
		(Dec) 5ESS LRN FOA	1AESS LRN FOA	(Jun) Siemens G.A.	
			4ESS LRN FOA	(Jun) DMS G.A.	
			(Mar) DMS LRN FOA	Ericsson G.A.	
			(Mar) Siemens FOA	(May - Jun) BST Lab testing on DMS, 1A, 4E	
			Ericsson FOA	1AESS G.A. with LRN trigger	
				4ESS LRN G.A.	
				(Jun) <b>Deploy LRN on 5ESS</b>	
<b>Regional SMS:</b>	SMS schedule per SMS Committee timeline, showing a 6-3-97 ready date. Needs to advance to May, 1997 as a must-have date. Preference is for a 1Q97 date.				
<b>Carrier SCP/SMS:</b>	Individual Companies SCP/SMS should be available by May, 1997				
<b>Operator Services:</b>	Need to evaluate Operator Services impacts prior to defining the work effort				
<b>OSS &amp; Billing:</b>	Individual Companies need to have all systems ready by May, 1997				
<b>Internal Operations Planning:</b>	Individual Companies need to have processes in place by May, 1997				



## PROPOSED CPC to LRN SCHEDULE\*

January 5, 1996

MAJOR AREA OF FOCUS	1 Q96	2 Q96	3 Q96	4 Q96	1 Q97	2 Q97	4 Q97	1 Q98
<b>itches:</b> <b>ote: The 4ESS CPC</b> <b>ctionality is available</b> <b>lay)</b>	Commission order	(Feb) New York Trial begins	(Aug) NY Trial ends	(Dec) 5ESS CPC FOA  (Dec) DMS - G.A.	(Mar) 5ESS CPC G.A.  1AESS CPC FOA	CPC to LRN Trans. Plang.  1AESS G.A.	CPC to LRN Transition testing	<b>LRN Deployed</b>
	Finalize existing Switching rqmts (N.Y.) for 5ESS	Prelim. trial results	Final trial results	(Dec) Siemens - G.A.	Ericsson FOA  4ESS FOA	Ericsson G.A.  4ESS G.A.		
	Review Ericsson and Siemens specs and O.K.				(Mar) CPC Deployed on DMS, 5ESS, Siemens	CPC deployed on 1AESS, 4ESS, Ericsson		
	Evaluate needs for 4E and 1A requirements			(Nov - Jan) BST Multi Vendor Lab Testing	(Nov - Jan) BST Multi Vendor Lab Testing			
<b>egional SMS:</b>	SMS schedule per SMS Committee timeline, showing a 6-3-97 ready date. Needs to advance to February, 1997 as a must-have date. - SMS Specifications will need to include both CPC and SMS - Additional modifications will be needed to transition to LRN							
<b>arrier SCP/SMS:</b>	Individual Company SCP/SMS should be available by Jan, 1997 - Need to support both CPC and LRN in development - Additional modifications will be needed to transition to LRN							
<b>Operator Services:</b>	Need to evaluate Operator Services impacts prior to defining the work effort - Being tested in New York CPC trial							
<b>OSS &amp; Billing:</b>	Individual Company OSS and Billing system updates required by Feb, 1997 - Additional modifications will be needed to transition to LRN							
<b>Internal Operations Planning:</b>	Individual Company Processes need to be in place by Feb, 1997 - Some information will be available from the NY trial - Additional modifications will be needed to transition to LRN							

\* **Note:** This CPC alternative schedule is based on the New York trial, not a field-grade deployment.